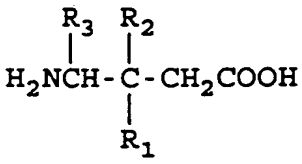
CLAIMS

What is Claimed is:

1. A compound selected from the following formula



I

wherein R_1 is a straight or branched alkyl of from 1 to 6 carbon atoms, phenyl, or cycloalkyl having from 3 to 6 carbon atoms; R_2 is hydrogen or methyl; and R_3 is hydrogen, methyl, or carboxyl; individual enantiomers thereof; and pharmaceutically acceptable salts thereof; with the proviso that when each of R_2 and R_3 is hydrogen, R_1 is other than methyl.

2. A compound of Claim 1 wherein R_1 is a straight or branched alkyl having from 1 to 6 carbon atoms.

3. A compound of Claim 2 wherein the alkyl group has 4 carbon atoms.

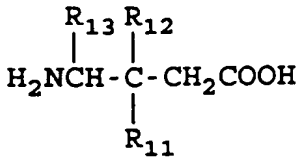
4. A compound of Claim 3 which is 4-amino-3-(2-methylpropyl)butanoic acid.

5. A compound of Claim 3 which is S-(+)-4-amino-3-(2-methylpropyl)butanoic acid.

6. A compound of Claim 3 which is R(-)-4-amino-3-(2-methylpropyl)butanoic acid.

7. A method of treating a patient having seizure disorders which comprises administering to said

patient an effective amount of a compound of the formula



II

wherein R_{11} is a straight or branched alkyl group having from 1 to 6 carbon atoms, phenyl, or cycloalkyl group having from 3 to 6 carbon atoms; R_{12} is hydrogen or methyl; and R_{13} is hydrogen, methyl, or carboxyl; individual enantiomers thereof; and pharmaceutically acceptable salts thereof.

8. The method of Claim 7 wherein R_{11} is a straight or branched alkyl group having from 1 to 6 carbon atoms.

9. The method of Claim 8 wherein the alkyl group has 4 carbon atoms.

10. The method of Claim 9 wherein the compound is 4-amino-3-(2-methylpropyl)butanoic acid.

11. The method of Claim 9 wherein the compound is S-(+)-4-amino-3-(2-methylpropyl)butanoic acid.

12. The method of Claim 9 wherein the compound is R-(-)-4-amino-3-(2-methylpropyl)butanoic acid.

13. The method of Claim 7 wherein the seizure disorder is the result of epilepsy, acerebral ischemic condition, Parkinson's disease, Huntington's disease, or a spastic condition.

14. The method of Claim 13 wherein the seizure disorder is the result of epilepsy.

15. The method of Claim 13 wherein the seizure disorder is the result of a spastic condition.

16. A pharmaceutical composition comprising a compound of Claim 1 together with a pharmaceutically acceptable carrier.

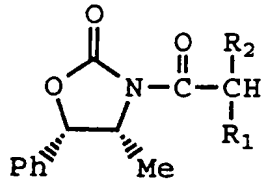
17. The composition of Claim 16 wherein the compound is one wherein R_1 is a straight or branched alkyl group having from 1 to 6 carbon atoms.

18. The composition of Claim 17 wherein the compound is 4-amino-3-(2-methylpropyl)butanoic acid.

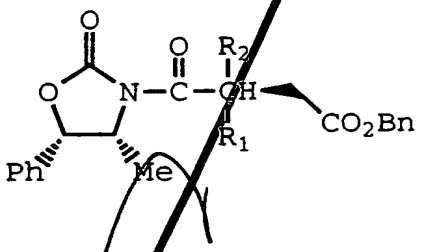
19. The composition of Claim 17 wherein the compound is S-(+)-4-amino-3-(2-methylpropyl)butanoic acid.

20. The composition of Claim 17 wherein the compound is R-(-)-4-amino-3-(2-methylpropyl)butanoic acid.

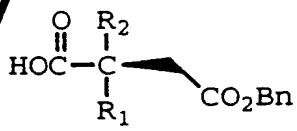
21. A process for preparing a chiral compound of Formula I which comprises converting an acid of the formula $HOC(=O)CH(R_1)(R_2)$ to the corresponding acid chloride of the formula $ClC(=O)CH(R_1)(R_2)$ which was added to a solution of (4R,5S)-(+)-4-methyl-5-phenyl-2-oxazolidinone and n-butyllithium at -78°C under argon to give an oxazolidinone derivative of the formula



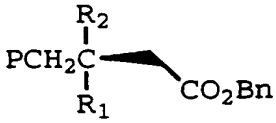
which was treated with benzyl α-bromoacetate to give the ester



which was treated with hydrogen peroxide and lithium oxide followed by treatment with sodium metabisulfite to give compounds of the formula

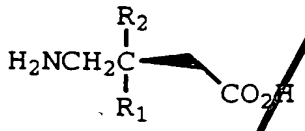


which is treated with borane dimethyl sulfide complex to give the alcohol



which is converted to the corresponding tosylate (Formula A wherein P is Tso) which is further

converted to the azide (Formula A wherein P is N_3) and the azide is reduced to the amine of the formula



wherein R_1 and R_2 have the meanings defined in Claim 1, Ph is phenyl, Me is methyl, and Bn is benzyl.

22. A compound which is
4-methyl-5-phenyl-2-oxazolidinone,
4-methyl-(2-methylpropyl)-2-dioxo-5-phenyl-3-oxazolidine butanoic acid, phenylmethyl ester,
4-methyl-pentanoyl chloride,
4-methyl-3-(4-methyl-1-oxopentyl)-5-phenyl-2-oxazolidinone,
2-(2-methylpropyl)-butanedioic acid, 4-(phenylmethyl)ester,
3-(azidomethyl)-5-methyl-hexanoic acid, phenylmethyl ester,
3-(hydroxymethyl)-5-methyl-hexanoic acid, phenylmethyl ester,
5-methyl-3-[[[(4-methylphenyl)sulfonyl]oxy]-methyl]-hexanoic acid, phenylmethyl ester,
3-(azidomethyl)-5-methyl-hexanoic acid,
2-(2-methylpropyl)-1,4-butanedioic acid, 4-(1,1-dimethylethyl) ester,
3-(azidomethyl)-5-methyl-, 1,1-dimethylethyl ester,
3-(hydroxymethyl)-5-methyl-hexanoic acid, 1,1-dimethyl ester,

5-methyl-3-[[[(4-methyl(phenyl)sulfonyl]oxy]-methyl-hexanoic acid, 1,1-dimethylethyl ester, or

4-methyl-(2-methylpropyl)-2-dioxo-5-phenyl-3-oxazolidinebutanoic acid, 1,1-dimethylethyl ester.

23. A compound which is

(S)-3-(azidomethyl)-5-methyl-hexanoic acid.

24. A compound which is

(S)-3-(azidomethyl)-5-methyl-hexanoic acid, 1,1-dimethylethyl ester.

25. A compound which is

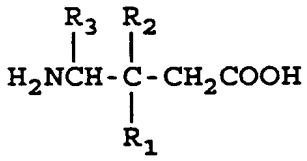
(S)-5-methyl-3-[[[(4-methyl(phenyl)sulfonyl]-oxy]methyl-hexanoic acid, 1,1-dimethylethyl ester,

(S)-3-(hydroxymethyl)-5-methyl-, 1,1-di-methylethyl ester,

(S)-2-(2-methylpropyl)-1,4-butanedioic acid, 4-(1,1-dimethylethyl) ester, or

(S)-4-methyl-(2-methylpropyl)-2-dioxo-5-phenyl-3-oxazolidinebutanoic acid, 1,1-dimethyl-ethyl ester.

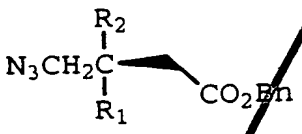
26. A process for preparing a chiral compound of the formula



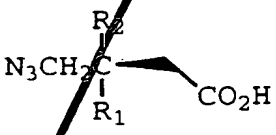
I

wherein R_1 is a straight or branched alkyl of from 1 to 6 carbon atoms, phenyl, or cycloalkyl having from 3 to 6 carbon atoms; R_2 is hydrogen or methyl; and R_3 is hydrogen, methyl, or carboxyl,

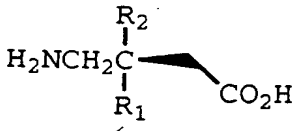
which comprises hydrolyzing an azide of the formula



to an intermediate azide of the formula



and the intermediate azide is reduced to the amine of the formula



wherein R_1 and R_2 have the meanings defined in Claim 1, Ph is phenyl, Me is methyl, and Bn is benzyl.

27. A process as defined in Claim 26 wherein the azide is hydrolysed by treatment with sodium hydroxide.

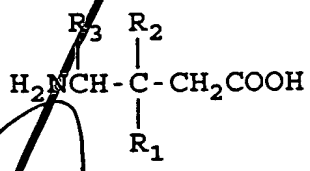
28. A process as defined in Claim 26 further comprising the step of extraction of intermediate azide into an aqueous base.

29. A process as defined in Claim 28 further comprising the step of acidifying the aqueous extract.

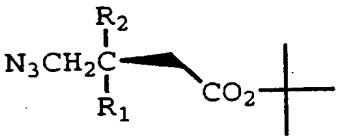
30. A process as defined in Claim 26 wherein the intermediate azide is reduced under near neutral conditions to give the amino acid.

31. The amino acid obtained by the process defined in Claim 26.

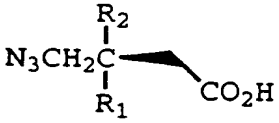
32. A process for preparing a chiral compound of the formula



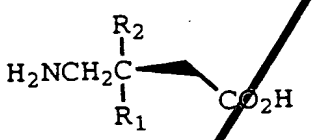
wherein R_1 is a straight or branched alkyl of from 1 to 6 carbon atoms; R_2 is hydrogen or methyl; and R_3 is hydrogen, methyl, or carboxyl, which comprises hydrolyzing an azide of the formula



to an intermediate azide of the formula



and the intermediate azide is reduced to the amine of the formula



wherein R_1 and R_2 have the meanings defined in Claim 1, Ph is phenyl, and Me is methyl.

33. A process as defined in Claim 32 wherein the azide is hydrolysed by treatment with sodium hydroxide.

34. A process as defined in Claim 32 further comprising the step of extraction of intermediate azide into an aqueous base.

35. A process as defined in Claim 34 further comprising the step of acidifying the aqueous extract.

36. A process as defined in Claim 32 wherein the intermediate azide is reduced under near neutral conditions to give the amino acid.

37. The amino acid obtained by the process defined in Claim 32.

Add B17

Add C17